Gunter, Jason

From:

James, Kevin <kjames@doerun.com>

Sent:

Thursday, December 11, 2014 12:21 AM

To:

Gunter, Jason

Cc:

Yingling, Mark; Neaville, Chris; Montgomery, Michael; 'robert.hinkson@dnr.mo.gov';

'brandon.wiles@dnr.mo.gov'; 'Ty Morris (TMorris@barr.com)'

Subject:

Rivermines Progress Report - November

Attachments:

removed.txt; 2014-11-19 RM NPDES Pace Lab Report.pdf; Remediation Air Report with 4thQ

Audit - October 2014.pdf; RiverMinesElvins ProgressReport-Nov2014.pdf

Jason -

Attached is the November Progress Report for the Rivermines Site.

Best regards,

Kevin James

Kevin James

×

Environmental Engineering

W: 573.626.2096 C: 573.247.6766

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67CR 40482432 4.3 Superfund

aco



Remediation Group

Kevin James Environmental Engineering Supervisor kjames@doerun.com

December 10, 2014

Mr. Jason Gunter Remedial Project Manager U.S. Environmental Protection Agency Region 7 - Superfund Branch 11201 Renner Blvd. Lenexa, KS 66219

Re: The Doe Run Company - Elvins/Rivermines Mine Tailings Site Monthly Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 56 of the Unilateral Administrative Order (UAO) (CERCLA-07-2005-0169) for the referenced project and on behalf of The Doe Run Company, the progress report for the period November 1, 2014 through November 30, 2014 is enclosed. If you have any questions or comments, please call me at 573-626-2096.

Sincerely,

Kevin James

Environmental Engineering Supervisor

Enclosures

c: Mark Yingling - TDRC (electronic only)

Chris Neaville – TDRC (electronic only)

Michael Montgomery – TDRC (electronic only)

Brandon Wiles - MDNR

Ty Morris - Barr Engineering

Elvins/Rivermines Mine Tailings Site

Park Hills, Missouri

Removal Action - Monthly Progress Report

Period: November 1, 2014 - November 30, 2014

1. Actions Performed and Problems Encountered This Period:

- a. During this period, flow from the seepage pond was directed through the roughing filter, the iron filter, and then into the round tank, where it discharged directly into the effluent channel.
- b. Flow to the east treatment cell remained off throughout this period.
- c. Work continued on the development of the Post-Removal Site Control Plan for the site.
- d. Work on the continued on the task of revising the draft surface water management plan to address the comments received in the comment letters from EPA and MDNR on October 28, 2014.

2. Analytical Data and Results Received This Period:

- a. During this period, water samples were collected from just upstream of Old Missouri Highway 32, as well as from upstream and downstream of the confluence of the site discharge with Flat River. The analytical results for this event are included with this progress report.
- b. During this period, the ambient air monitoring samples for October were processed and the Ambient Air Monitoring Report for October 2014 was completed. A copy of the Ambient Air Monitoring Report for October is attached.
- c. During this period the quarterly audits of the monitors and the semi-annual audit of the meteorological system was completed. A copy of the 4th Quarter 2013 Lead/PM10 Samplers and Meteorological System Performance Audit Report is attached

3. Developments Anticipated and Work Scheduled for Next Period:

- a. Complete monthly water sampling activities as described in the Removal Action Work Plan.
- b. Complete air monitoring activities as described in the Removal Action Work Plan.
- c. Continue developing the Post-Removal Site Control Plan.
- d. Respond to comments on the surface water management plan for the site.

4. Changes in Personnel:

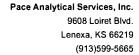
- Mark Nations has retired from The Doe Run Company and will no longer act as the Project Coordinator.
- b. Kevin James will now be the Project Coordinator for The Doe Run Company. In accordance with Section VII, Paragraph 71, of the above referenced Unilateral Administrative Order this will serve as the written notice of the change in Project Coordinators.
- c. The following members of the remediation group working in the Old Lead Belt region have been transferred to positions at the active mining and milling operations - Chris Rawlins, Jimmie Minx, Keith Bates, Adam Mills, and Steve Sadler.

5. Issues or Problems Arising This Period:

a. None.

6. Resolution of Issues or Problems Arising This Period:

a. None.





December 04, 2014

Amy Sanders The Doe Run Company P. O. Box 500 Viburnum, MO 65566

RE: Project: NPDES (RIVERMINES)

Pace Project No.: 60182950

Dear Amy Sanders:

Enclosed are the analytical results for sample(s) received by the laboratory on November 20, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church

jamie.church@pacelabs.com

Project Manager

Enclosures







CERTIFICATIONS

Project:

NPDES (RIVERMINES)

Pace Project No.:

60182950

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219 WY STR Certification #: 2456.01 Arkansas Certification #: 13-012-0 Illinois Certification #: 003097 lowa Certification #: 118 Kansas/NELAP Certification #: E-10116 Louisiana Certification #: 03055 Nevada Certification #: KS000212008A Oklahoma Certification #: 9205/9935 Texas Certification #: T104704407 Utah Certification #: KS00021

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project:

NPDES (RIVERMINES)

Pace Project No.:

60182950

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60182950001	23069 / RIVERMINES DOWNSTREAM	Water	11/19/14 09:58	11/20/14 06:20
60182950002	23070 / RIVERMINES UPSTREAM	Water	11/19/14 10:19	11/20/14 06:20
60182950003	23071 / RIVERMINES 001	Water	11/19/14 10:09	11/20/14 06:20

REPORT OF LABORATORY ANALYSIS



SAMPLE ANALYTE COUNT

Project:

NPDES (RIVERMINES)

Pace Project No.:

60182950

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60182950001	23069 / RIVERMINES DOWNSTREAM	EPA 200.7	NDJ	6	PASI-K
		EPA 200.7	NDJ	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		EPA 300.0	TDB	1	PASI-K
0182950002 23070 / RIVERMINES UP	23070 / RIVERMINES UPSTREAM	EPA 200.7	NDJ	6	PASI-K
		EPA 200.7	NDJ	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		EPA 300.0	OL	1	PASI-K
60182950003	23071 / RIVERMINES 001	EPA 200.7	NDJ	3	PASI-K
		SM 2540D	JMC1	1	PASI-K
		SM 2540F	JML	1	PASI-K
		EPA 300.0	OL	1	PASI-K

REPORT OF LABORATORY ANALYSIS



ANALYTICAL RESULTS

Project:

NPDES (RIVERMINES)

Pace Project No.: 60182950

Sample: 23069 / RIVERMINES Lab ID: 60182950001 Collected: 11/19/14 09:58 Received: 11/20/14 06:20 **DOWNSTREAM** Report Parameters Results Units MDL DF Limit Prepared Analyzed CAS No. Qual Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 200.7 Metals, Total Cadmium 2.6J ug/L 5.0 0.56 11/22/14 10:44 11/24/14 17:30 7440-43-9 Calcium 116000 ug/L 100 11/22/14 10:44 11/24/14 17:30 7440-70-2 7.8 Lead 5.1 ug/L 5.0 2.2 11/22/14 10:44 11/24/14 17:30 7439-92-1 Magnesium 46800 ug/L 50.0 17.0 11/22/14 10:44 11/24/14 17:30 7439-95-4 483000 ug/L Total Hardness by 2340B 500 11/22/14 10:44 11/24/14 17:30 Zinc 3180 ug/L 50.0 12.5 11/22/14 10:44 11/24/14 17:30 7440-66-6 200.7 Metals, Dissolved (LF) Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 5.0 0.56 11/22/14 16:30 11/24/14 11:56 7440-43-9 Cadmium, Dissolved 2.5J ug/L Lead, Dissolved ND ug/L 2.2 11/22/14 16:30 11/24/14 11:56 7439-92-1 5.0 1 11/22/14 16:30 11/24/14 11:56 7440-66-6 Zinc, Dissolved 2830 ug/L 50.0 12.5

300.0 IC Anions 28 Days Analytical Method: EPA 300.0

2540D Total Suspended Solids

Total Suspended Solids

Date: 12/04/2014 09:31 AM

Sulfate **281** mg/L 20.0 10.0 20 11/30/14 12:21 14808-79-8

5.0

5.0

1

11/25/14 13:57

Analytical Method: SM 2540D

6.0 mg/L



ANALYTICAL RESULTS

Project:

NPDES (RIVERMINES)

Pace Project No.: 60182950

Date: 12/04/2014 09:31 AM

Sample: 23070 / RIVERMINES UPSTREAM

Lab ID: 60182950002 Collected: 11/19/14 10:19 Received: 11/20/14 06:20 Matrix: Water

UPSTREAM									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical	Method: EP	A 200.7 Prepa	ration Meth	od: EF	A 200.7			
Cadmium	ND u	ıg/L	5.0	0.56	1	11/22/14 10:44	11/24/14 17:34	7440-43-9	
Calcium	51500 u	ıg/L	100	7.8	1	11/22/14 10:44	11/24/14 17:34	7440-70-2	
Lead	ND u	ıg/L	5.0	2.2	1	11/22/14 10:44	11/24/14 17:34	7439-92-1	
Magnesium	33100 u	ıg/L	50.0	17.0	1	11/22/14 10:44	11/24/14 17:34	7439-95-4	
Total Hardness by 2340B	265000 u	ıg/L	500		1	11/22/14 10:44	11/24/14 17:34		
Zinc	ND u	ıg/L	50.0	12.5	1	11/22/14 10:44	11/24/14 17:34	7440-66-6	
200.7 Metals, Dissolved (LF)	Analytical	Method: EP	A 200.7 Prepa	aration Meth	od: EF	A 200.7			
Cadmium, Dissolved	ND u	ıg/L	5.0	0.56	1	11/22/14 16:30	11/24/14 12:03	7440-43-9	
Lead, Dissolved	ND t	ıg/L	5.0	2.2	1	11/22/14 16:30	11/24/14 12:03	7439-92-1	
Zinc, Dissolved	ND t	ıg/L	50.0	12.5	1	11/22/14 16:30	11/24/14 12:03	7440-66-6	
2540D Total Suspended Solids	Analytical	Method: SM	1 2540D						
Total Suspended Solids	ND r	ng/L	5.0	5.0	1		11/25/14 13:57		
300.0 IC Anions 28 Days	Analytical	Method: EP	A 300.0						
Sulfate	54.9 r	ng/L	5.0	2.5	5		11/25/14 16:06	14808-79-8	



ANALYTICAL RESULTS

Project:

NPDES (RIVERMINES)

Pace Project No.:

Date: 12/04/2014 09:31 AM

60182950

Sample: 23071 / RIVERMINES 001	Lab ID: 601829	0003 Collected	l: 11/19/1	10:09	Received: 11/	20/14 06:20 Ma	atrix: Water	
Parameters	Results Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method:	EPA 200.7 Prepa	ration Meth	od: EP	A 200.7			
Cadmium	18.7 ug/L	5.0	0.56	1	11/22/14 10:44	11/24/14 17:36	7440-43-9	
Lead	39.6 ug/L	5.0	2.2	1	11/22/14 10:44	11/24/14 17:36	7439-92-1	
Zinc	16300 ug/L	50.0	12.5	1	11/22/14 10:44	11/24/14 17:36	7440-66-6	
2540D Total Suspended Solids	Analytical Method:	SM 2540D						
Total Suspended Solids	7.0 mg/L	5.0	5.0	1		11/25/14 13:58		
2540F Total Settleable Solids	Analytical Method:	SM 2540F						
Total Settleable Solids	ND mL/L/hr	0.20	0.20	1		11/20/14 16:00		
300.0 IC Anions 28 Days	Analytical Method:	EPA 300.0						
Sulfate	840 mg/L	100	50.0	100		11/25/14 16:22	14808-79-8	



Project:

NPDES (RIVERMINES)

Pace Project No.:

60182950

QC Batch:

MPRP/29935

Analysis Method:

EPA 200.7

QC Batch Method:

EPA 200.7

Analysis Description:

200.7 Metals, Total

Associated Lab Samples:

60182950001, 60182950002, 60182950003

METHOD BLANK: 1484231

Matrix: Water

Date: 12/04/2014 09:31 AM

Associated Lab Samples: 60182950001, 60182950002, 60182950003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	 ug/L	ND	5.0	11/24/14 17:08	
Calcium	ug/L	ND	100	11/24/14 17:08	
Lead	ug/L	ND	5.0	11/24/14 17:08	
Magnesium	ug/L	ND	50.0	11/24/14 17:08	
Total Hardness by 2340B	ug/L	ND	500	11/24/14 17:08	
Zinc	ug/L	ND	50.0	11/24/14 17:08	

LABORATORY CONTROL SAM	PLE: 1484232					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Cadmium	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	9240	92	85-115	
Lead	ug/L	1000	996	100	85-115	
Magnesium	ug/L	10000	9290	93	85-115	
Total Hardness by 2340B	ug/L		61300			
Zinc	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX S	SPIKE DUPLI	CATE: 14842	33		1484234							
Parameter	Units	60182949001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max RPD	Qual
Cadmium	ug/L	ND	1000	1000	1030	1040	103	104	70-130		20	
Calcium	ug/L	50200	10000	10000	59000	59500	88	93	70-130	1	20	
Lead	ug/L	ND	1000	1000	992	1000	99	100	70-130	1	20	
Magnesium	ug/L	30300	10000	10000	39500	40000	92	96	70-130	1	20	
Total Hardness by 2340B	ug/L	250000			310000	313000				1		
Zinc	ug/L	17.7J	1000	1000	1000	1010	98	99	70-130	1	20	

MATRIX SPIKE SAMPLE:	1484235				·		
Parameter	Units	60182950001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	2.6J	1000	1050	105	70-130	
Calcium	ug/L	116000	10000	125000	87	70-130	
Lead	ug/L	5.1	1000	1010	100	70-130	
Magnesium	ug/L	46800	10000	56500	97	70-130	
Total Hardness by 2340B	ug/L	483000		545000			
Zinc	ug/L	3180	1000	4150	96	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS



Project:

NPDES (RIVERMINES)

Pace Project No.:

60182950

QC Batch:

MPRP/29925

Analysis Method:

EPA 200.7

QC Batch Method:

EPA 200.7

Analysis Description:

200.7 Metals, Dissolved

Associated Lab Samples:

60182950001, 60182950002

METHOD BLANK: 1484022

Matrix: Water

Associated Lab Samples:

60182950001, 60182950002

Blank Reporting

Limit

Qualifiers Analyzed

Parameter Cadmium, Dissolved Lead, Dissolved

Zinc, Dissolved

Units ug/L ug/L ug/L

ND ND ND

Result

5.0 11/24/14 11:43 5.0 11/24/14 11:43 50.0 11/24/14 11:43

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

Cadmium, Dissolved

Lead, Dissolved

Zinc, Dissolved

1484023

Units

60182949001

Result

LCS Spike Conc. Result 1000

% Rec 997

1000

985

955

% Rec Limits

Qualifiers

Cadmium, Dissolved Lead, Dissolved Zinc, Dissolved

ug/L ug/L ug/L

Units

ug/L

ug/L

ug/L

1000 1000

Spike

1000

1000

1000

988 959 99 96

100

LCS

85-115 85-115 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

MS

ND

ND

13.3J

MSD

Spike MS Conc. Result

1000

1000

1000

1484025 MSD

Result

992

978

945

100

99

94

MS

% Rec

MSD

% Rec Max Limits RPD RPD

Qual

% Rec 99 70-130 20 98 70-130 20 1 70-130 20 93 1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

NPDES (RIVERMINES)

Pace Project No.:

60182950

QC Batch:

WET/51737

Analysis Method:

SM 2540D

QC Batch Method:

SM 2540D

Analysis Description:

2540D Total Suspended Solids

Associated Lab Samples:

60182950001, 60182950002, 60182950003

METHOD BLANK: 1485075

Parameter

Matrix: Water

Associated Lab Samples:

60182950001, 60182950002, 60182950003

Units

Units

Blank Result Reporting

Limit

Analyzed

Qualifiers

Total Suspended Solids

mg/L

ND

5.0 11/25/14 13:54

SAMPLE DUPLICATE:

1485076

60182933003

Dup Result

RPD

Max **RPD**

Qualifiers

Total Suspended Solids

mg/L

Result 17.0

12.0

34

10 D6

SAMPLE DUPLICATE: 1485077

Parameter

Parameter

Units

60182949001 Result

Dup Result

RPD

Max **RPD**

Qualifiers

Total Suspended Solids

Date: 12/04/2014 09:31 AM

mg/L

14.0

11.0

24

10 D6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

NPDES (RIVERMINES)

Pace Project No.:

60182950

QC Batch:

WETA/31950

Analysis Method:

EPA 300.0

QC Batch Method:

EPA 300.0

Analysis Description:

300.0 IC Anions

METHOD BLANK: 1484175

Matrix: Water

Associated Lab Samples:

Associated Lab Samples:

60182950002, 60182950003

Blank Result Reporting Limit

Qualifiers

Sulfate

mg/L

60182950002, 60182950003

ND

1.0 11/25/14 13:11

Analyzed

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

1484176

Units

Units

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

MS

% Rec

Qualifiers

Sulfate

mg/L

5

4.9

1484178

98

90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1484177

587

MSD

MS

MSD

MSD

% Rec

Max RPD RPD

Sulfate

Parameter

60182949001 Result

Spike Conc. 25

MŞ

Spike Result Conc. 25

Result 60.4 59:5

% Rec 100

Limits 80-120

Qual 15

MATRIX SPIKE SAMPLE:

Sulfate

1484179

mg/L

Units

mg/L

Parameter ::

Units

35.3

60183029007 Result

Spike Conc. 250

MS Result 949

MS % Rec 145 % Rec Limits

Qualifiers 80-120 M1

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REPORT OF LABORATORY ANALYSIS

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NPDES (RIVERMINES)

60182950

Parameter

LABORATORY CONTROL SAMPLE:

Parameter

Date: 12/04/2014 09:31 AM

Sulfate

Project:

Pace Project No.:

QUALITY CONTROL DATA

QC Batch: WETA/31975 EPA 300.0 Analysis Method: QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions Associated Lab Samples: 60182950001 METHOD BLANK: 1485361 Matrix: Water Associated Lab Samples: 60182950001 Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Sulfate ND 11/30/14 09:29 mg/L METHOD BLANK: 1486979 Matrix: Water Associated Lab Samples: 60182950001 Blank Reporting Parameter Units Result Limit Analyzed Qualifiers 1.0 12/01/14 10:14 Sulfate mg/L ND METHOD BLANK: 1487688 Matrix: Water Associated Lab Samples: 60182950001

Sulfate	mg/L	I	ND	1.0 12/02/14 1	3:39	
LABORATORY CONTROL SAMPLE:	1485362	Spika	LCS	LCS .	 % Rec	
Parameter	Units	Spike Conc.	Result	% Rec	Limits	Qualifiers
Sulfate	mg/L		4.9	97	90-110	
LABORATORY CONTROL SAMPLE:	1486980					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.7	94	90-110	

Blank

Result

Units

1487689

mg/L

Units

Reporting

Limit

Analyzed

Qualifiers

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

LCS

Result

4.6

Spike

Conc.

5

LCS

% Rec

93

% Rec

Limits

90-110

Qualifiers

REPORT OF LABORATORY ANALYSIS

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Project:

Sulfate

NPDES (RIVERMINES)

Pace Project No.:

60182950

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1485363

Spike

1485364

MSD MS

Spike

MS

MSD MS MSD % Rec Max

Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD RPD Qual Sulfate 80-120 15 M1 mg/L 722 250 250 885 892 65 68

MATRIX SPIKE SAMPLE:

1485365

60183183001

60183183002

Spike

MS Result

MS % Rec % Rec Limits

Qualifiers

Parameter

mg/L

Units

Result 165

Conc. 50

214

97

80-120

Results presented on this page are in the units Indicated by the "Units" column except where an alternate unit is presented to the right of the result.





QUALIFIERS

Project:

NPDES (RIVERMINES)

Pace Project No.: 6

60182950

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

Date: 12/04/2014 09:31 AM

D6 The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:

NPDES (RIVERMINES)

Pace Project No.:

Date: 12/04/2014 09:31 AM

60182950

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60182950001	23069 / RIVERMINES DOWNSTREAM	EPA 200.7	MPRP/29935	EPA 200.7	ICP/22408
60182950002	23070 / RIVERMINES UPSTREAM	EPA 200.7	MPRP/29935	EPA 200.7	ICP/22408
60182950003	23071 / RIVERMINES 001	EPA 200.7	MPRP/29935	EPA 200.7	ICP/22408
60182950001	23069 / RIVERMINES DOWNSTREAM	EPA 200.7	MPRP/29925	EPA 200.7	ICP/22406
60182950002	23070 / RIVERMINES UPSTREAM	EPA 200.7	MPRP/29925	EPA 200.7	ICP/22406
60182950001	23069 / RIVERMINES DOWNSTREAM	SM 2540D	WET/51737		
60182950002	23070 / RIVERMINES UPSTREAM	SM 2540D	WET/51737		
60182950003	23071 / RIVERMINES 001	SM 2540D	WET/51737		
60182950003	23071 / RIVERMINES 001	SM 2540F	WET/51655		
60182950001	23069 / RIVERMINES DOWNSTREAM	EPA 300.0	WETA/31975		
60182950002	23070 / RIVERMINES UPSTREAM	EPA 300.0	WETA/31950		
60182950003	23071 / RIVERMINES 001	EPA 300.0	WETA/31950		



Sample Condition Upon Receipt

WO#:60182950

Client Name: 5 C Optional	
Courier: Fed Ex □ UPS □ USPS □ Client □ Commercial □ Pace □ Other 図 V = A Proj Due Dat	e :
Tracking #: Pace Shipping Label Used? Yes O No Proj Name:	
Custody Seal on Cooler/Box Present: Yes Ø No □ Seals intact: Yes Ø No □	
Packing Material: Bubble Wrap Bubble Bags Foam None Other 2P/C	
Thermometer Used: T239 / T-194 Type of Ice: We Blue None - Samples received on ice, cooling pro	cess has begun
Cooler Temperature: 2-6 (circle one)	amining
Temperature should be above freezing to 6°C	
Chain of Custody present: ☐Yes ☐No ☐N/A 1.	
Chain of Custody filled out:	
Chain of Custody relinquished: ☐Yes ☐No ☐N/A 3.	
Sampler name & signature on COC: DYes DNo DN/A 4.	
Samples arrived within holding time: ØYes □No □N/A 5.	
Short Hold Time analyses (<72hr): ZYes DNo DN/A 6. 5 5	
Rush Turn Around Time requested:	
Sufficient volume:	
Correct containers used:	
Pace containers used:	
Containers intact:	·
Unpreserved 5035A soils frozen w/in 48hrs?	· · · · · · · · · · · · · · · · · · ·
j j	
Includes date/time/ID/analyses Matrix: //) 13.	
All containers needing preservation have been checked.	
All containers needing preservation are found to be in compliance with EPA recommendation.	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water),	
Trip Blank present:	
Pace Trip Blank lot # (if purchased):	
Headspace in VOA vials (>6mm): □Yes □No □Á/A	
/ _{16.}	
	
Person Contacted: Date/Time:	
Comments/ Resolution:	····
11/20/14	·
Project Manager Review: Date:	

CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

DOE RUN

Required Project Information: Company: The Doe Run Company Address: PO Box 500 Copy To: Amy Sanders Email To: asanders@doerun.com Required Project Information: Invoice Information: Admission: Amy Sanders Attention: Amy Sanders Attention: Amy Sanders Company Name: The Doe Run Company Address: PO Box 500, Viburnum, MO 6556 Pace Quote Reference: Reference: Reference: Reference: Reference: COC#: 1083
Address: PO Box 500 Copy To: Company Name: The Doe Run Company REGULATORY AGENCY Address: PO Box 500, Viburnum, MO 8556 Email To: asanders@doerun.com Purchase Order No: Pace Quote Reference: UST RCRA COC#: 1083
Address: PO Box 500, Viburnum, MO 6556
Email To: asanders@doerun.com Purchase Order No.: Pace Quote UST RCRA
Reference: COC#: 1083
Phone: (573) 689,4535 Fax: (573) 244,8179 Project Name: NPDES (Rivermines)
MO Manager MO
Requested Due Date/TAT: 5 To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Project Number: Pace Profile #: STATE: VIII To 7 Days Profile #: S
Section C Required Sample Information Valid Matrix Codes
Required Sample Information Valid Matrix Codes MATRIX CODE WATER WITE WATER WATE WATER
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Required Sample Information Valid Matrix Codes MATRIX WATER WATE
Sample IDs (A-Z, 0-91 /-) Sample IDs (A-Z, 0
WATRIX ## DATE TIME DATE TIME 0.000 mL 1.000
1 23069 1393N1- 1897U WT G 11/19/14 3 956 3 2 1 CD-D, PB-D, ZN-D, HARD, SO4, CD-T, PB-T, TSS-T, ZN-T vermines Downstri
2 3 23070 CD-D, PB-D, ZN-D, HARD, SO4, CD-T, PB-T, TSS-T, ZN-T wermines Upstream Cu
3 23070
4 5 23071 + 18 PT WW G 11/19/14 / 1009 3 1 1 1 1 SO4, SS, TSS, CD-T, PB-T, ZN-T Rivermines 001 C
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ADDITIONAL COMMENTS RELINQUISHED, BY / AFFILIATION DATE THE SAMPLE CONDITIONS ADDITIONAL COMMENTS RELINQUISHED, BY / AFFILIATION DATE (MRBDY) ADDITIONAL COMMENTS
200.7 Total Recoverable and Dissolved Metals Larry Populars UNC 11/19/14 1106 11/19/14 11/19/14
SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Larry Hopkins DATE Signed DATE Signed
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: SIGNATURE of SAMPLER: DATE Signed (MAI/DDXX): 11/19/14